

10-1-13

Forces (vector quantity)

force: Any push or pull on an object due to that object's interaction with another object.

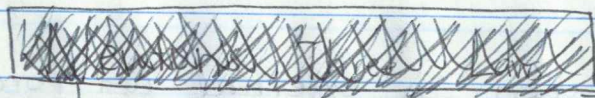
- something capable of changing an object's state of motion, that is, changing its velocity.

- forces only exist as a result of an interaction

- an unbalanced, or net, force will give an object an acceleration in the direction of the net force.
↳ could be a deceleration.

- If there is no net force - that is all forces are balanced - the object will not accelerate

- it will keep in its current state of motion.
(either at rest or moving with a constant velocity)



Newton's Laws of Motion

1st Law: If no net force acts on a body ($\vec{F}_{\text{net}} = 0$) then the body's velocity cannot change, that is, cannot accelerate.

no net force

(1) There is no change in the magnitude of velocity (speed)

(2) no change in the direction of motion
(velocity is a vector)

\vec{F}_{net} = vector sum of all forces acting on an object.